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THE VOLCANIC ERUPTION OF 30 MARCH 1956 ON KAMCHATKA

On 30 March 1956, a tremendous volcanic eruption occurred on Kamchatka Peninsula. Not until recent months, however, did the Soviet press publish sufficient information to permit a proper assessment of the magnitude of the explosion. Soviet sources now indicate that the eruption was the biggest that Kamchatka, a peninsula noted for the intensity of its volcanic activity, has experienced in the last 50 years. They further claim -- and their data tend to support the claim -- that the eruption was of a greater magnitude than the famous 1902 eruption of Mount Pelée on Martinique. The available details, although still incomplete, enable us to reconstruct the following sequence of events.

Sopka Bezmyannaya¹, the volcano that erupted, is located at 55° 58' N-160° 31' E or approximately 350 kilometers (215 miles) north-northeast of Petropavlovsk. It is situated on the eastern side of the Kamchatka River Valley, about 80 kilometers (50 miles) from the eastern coast of Kamchatka. Although located between two active volcanoes of the Klyuchevskaya group (the most important group of volcanoes in Kamchatka), Sopka Bezmyannaya had been inactive for centuries. In a recent study on volcanoes of Kamchatka, Soviet vulcanologists had classified it as "extinct."² This study had barely had barely been published when Bezmyannaya began speaking up as if in protest. In early October 1955, the seismic station at Klyuchi (which had been set

¹Literally "volcano without a name"
²See A. K. Zavaritskiy, Volcany Kamchatki, Moscow, 1955

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up primarily to study the adjacent active volcano Sopka Klyuchevskaya) began to register an increasing number of earth tremors. Finally on 22 October, Bezyayasnaya erupted. Initially, the activity was limited to rising pillars of smoke; in a short time, dense puffs of ashes and gas, illuminated by flashes of lightning, rose to a height of several kilometers (a mile or two), while the ground quaked under a series of shocks. The clouds of ashes grew larger, eventually obscuring the sky and causing complete darkness at times. On the slopes of the volcano, a layer of fresh ashes covered the ground to a thickness of several meters (yards). Even 40 kilometers (25 miles) away, at the settlement of Klyuchi, the fallout amounted to 16 kilograms of ashes per square meter of surface (3.3 pounds per square foot).

In November the eruption increased in intensity until the height of the pillar of ashes reached 11 kilometers (6.8 miles). By January, the eruption began to abate somewhat, and the Soviet vulcanologists were able to fly over the crater and make extensive observations. At that time, they saw that the summit of the volcano was partially destroyed and that the crater had grown considerably larger. Within the crater was a dome of half-thickened lava that glowed at night. By the middle of February the dome had spread outward to the edge of the crater and stone avalanches began to slide down the slopes of the volcano.

At 1711 hours on 30 March 1956, the earth shook violently and the volcano exploded again -- this time on a far more intense scale than before. The entire eastern slope of the volcano was destroyed "to its very foundations." Huge clouds of ashes were thrown up to a height of

40 kilometers (25 miles). All the trees within a radius of 20 kilometers (12.4 miles) were broken and scorched by the bursts of hot gases and ashes from the crater. A few minutes later, a stream of molten lava flowed out of the ruptured side of the volcano and rolled eastward 20 kilometers (12.4 miles) down the bed of the nearby Khepitsa River. In some places the lava was deposited to a depth of about 100 meters (330 feet). Meanwhile, the ejected ashes and gases had melted the snow over an area of approximately 500 square kilometers (200 square miles). The resulting runoff produced an enormous mass of flood water that carried away ashes, stones, soil, and trees and laid the landscape bare. Wherever the flow of mud and water came in contact with hot ashes or lava, secondary explosions took place by tens and even hundreds. The stream of mud and water continued down the Khepitsa Valley for 80 kilometers (50 miles), destroying everything in its path, and eventually poured into the Manchakta River at Kazaki, about 40 kilometers (25 miles) downstream from Klyuchi.

At the time of the eruption the wind was from the south, and it carried the cloud of ashes, and the accompanying streaks of lightning and peals of thunder, right into Klyuchi. The visibility there became so poor that people roamed about in search of their homes.

Data on the quantity of fallout for the eruption of 30 March are incomplete, but an appreciable amount was registered throughout an area 80 kilometers (50 miles) wide. The following morning the Klyuchi vulcanological station reportedly measured 20 kilograms per square meter (4.2 grams per square foot).⁴ The associated seismic disturbance also

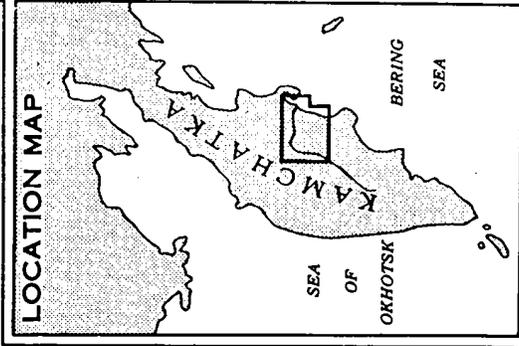
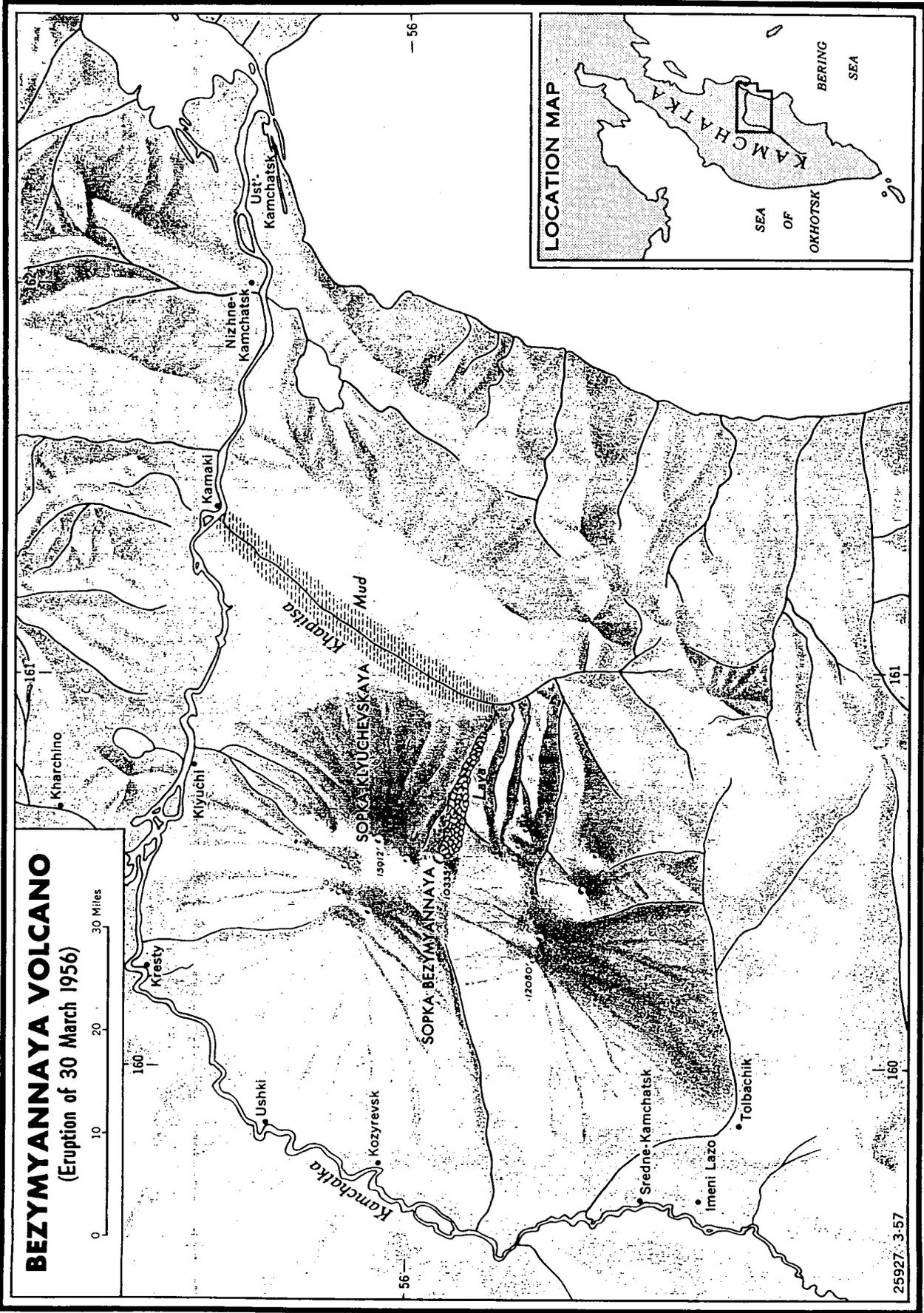
⁴This figure was garbled in transmission and is therefore not fully reliable. Assuming that the fallout value for 22 October was correct, this figure seems far too low.

set off a sea wave, which measured 58 centimeters (1.9 feet) at Attu Island in the Aleutians and 34 centimeters (1.1 feet) at Honolulu.

On 1 April 1956, still another explosion occurred. This time the focus of the disturbance was about 50 kilometers (31 miles) below the surface of Sopka Bezynyanaya, but the surface eruption shot gases and ashes up to a height of 10 kilometers (6 miles).

Although the force of the eruption of 30 March was reportedly at least several dozen times that of an ordinary atom bomb, there appear to have been no human casualties. Unlike the situation at Mount Pelée, where the 40,000 inhabitants of the town of Saint Pierre were in the path of the volcano's fury, the area immediately around Sopka Bezynyanaya is completely uninhabited. Nevertheless, activities at Klyuchi and other neighboring settlements must have been disrupted for a short period. It is also probable that additional dredging was required on the lower course of the Kamchatka River before the opening of the 1956 navigation season. At present, Soviet scientists feel the volcano has expended its force, and they consider it harmless.

Incidentally, films were taken of the main phases of the eruption and it is expected that a newreel on the subject will be released in the near future.



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